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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,070	07/25/2003	Karl-Heinz Kuebler	VWS-555-A	3124

7590 01/19/2007
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EXAMINER

CAMPBELL, THOR S


ART UNIT PAPER NUMBER

3742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s) 	
	10/628,070	KUEBLER ET AL.	
	Examiner	Art Unit	
	Thor S. Campbell	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 8, 9, 12, 14-18 are rejected under 35 USC 102(b) as being anticipated by Wade.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. It is noted that the method of making the device does not distinguish the device from the prior art having the structure claimed. Further, it is noted that the method of forming a fluid heating component, does not distinguish claim to a method of heating fluid over prior art showing all the steps of heating the fluid.

Claims 15, 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bochud (US 6243535).

Bochud discloses a method of making a heating device for heating fluid comprising, injection molding aluminum directly around a heating body, by applicant's admission in papers filed 5/19/06.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-18 are rejected under 35 USC 103(a) as unpatentable over Wade in view of common knowledge in the art as evidenced by Bochud (US 6243535).

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose insert molding the heaters in the thermally conductive mass. Bochud discloses insert molding a heater in a thermally conductive body in order to “entirely surround” and “ensure upon shrinking or cooling” the “securement” of the heating element. It would have been obvious to one of ordinary skill in the art to insert mold the heater in the thermally conductive mass for the reasons delineated above.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bochud.

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Bochud teaches the claimed invention except for an explicit teaching of connecting a ground to the heating element. It is well known in the art of fluid heating to connect a ground to the heating element for reasons of safety.

Claims 2-4 are rejected under 35 USC 103(a) as unpatentable over Wade in view of Cassidy.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose a control means, connected to the heating means, for activating the heating means; and a thermally conductive medium coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Cassidy discloses *inter alia* a fluid heater comprising a fluid flow channel and a control means (104) connected to the heating means, for activating the heating means; and a thermally conductive medium (134) coupled in heat transfer relationship between at least a portion of the control means and the flow channel. It would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of Cassidy, to modify the device of Wade to include *inter alia* a printed circuit board for controlling the heater, and to place the PCB in contact with the thermally conductive mass via a thermally conductive medium in order to

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maintain the compactness of the heating device while using waste heat generated by the control components to further heat.

Claims 5-7, 10-11 are rejected under 35 USC 103(a) as unpatentable over Wade in view of Rochitelli.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose a control means, connected to the heating means, for activating the heating means; and a thermally conductive medium coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Rocchitelli discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (1) heating means (36), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, a control means (39), connected to the heating means, for activating the heating means; and a thermally conductive medium (28, 29) coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Claim 13 is rejected under 35 USC 103(a) as unpatentable over Wade in view of Rochitelli and further in view of common knowledge in the art as evidenced by Gusmer (US 3782456).

Wade and Rocheitelli disclose the claimed invention as described above except the positioning of an o-ring gasket between closure and the mass. It is generally well know to seal components in a fluid heating system with and o-ring gasket, as evidenced by Gusmer. Gusmer discloses the use of an o-ring gasket for sealing a similar closure to a similar thermally conductive mass. It would have been obvious to use an o-ring in the Wade device to seal the union since it is a well-known means of sealing as evidenced by Gusmer.

Response to Arguments

Applicant's arguments filed 5/19/06 have been fully considered but they are not persuasive. With respect to claims 1-14, applicant argues again that the method of making the heating device, i.e. by insert molding the heating means in contact with the thermal mass, should be given patentable "consideration as traditional product characteristics" in a product-by-process claim. The examiner disagrees with the applicant's assertion that the "insert molded" limitation distinguishes over the prior art, and therefore does not warrant "consideration as traditional product characteristics". Applicant further argues that the heater is not in direct contact with ther thermally conductive mass and therefore does not meet the claims. It is noted that the broadest interpretation of the Wade reference reads on the claims since the heater is broadly interpreted as the resistance wire and the electrical insulators combined and therefore the "heater" as thus defined IS in direct contact with the casing. For further support for this interpretation, applicant

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is pointed to the instant invention, in as much as the Calrod type heating element is known to be a resistance wire embedded in a thermally conductive, electrically insulative material and further surrounded by a metal sleeve or jacket.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thor S. Campbell whose telephone number is 571-272-4776. The examiner can normally be reached on Mon-Fri 5:30AM-2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TSC



THOR S. CAMPBELL
PRIMARY EXAMINER